

IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. - 42. (Cancelled)

43. (Currently Amended) A computer-accessible memory medium that stores program instructions executable by a processor to perform:

displaying a node in a graphical program;
receiving first user input invoking display of a plurality of functions for the node;
displaying the plurality of functions for the node in response to the first user input;

receiving second user input selecting a function from the plurality of functions;
determining graphical program code based on the second user input, wherein the determined graphical program code is executable to provide functionality in accordance with the selected function;

associating the determined graphical program code with the node, wherein, when the node in the graphical program executes, the determined graphical program code executes to provide the functionality in accordance with the selected function;

wherein the node represents a subprogram, wherein the program instructions are further executable to perform:

receiving user input invoking expansion of the node; and
displaying the subprogram in response to said invoking.

44. (Previously Presented) The memory medium of claim 43, wherein the node has a first node icon which is displayed in the graphical program, and wherein the first node icon has a first appearance, wherein the program instructions are further executable to perform:

changing the first node icon to a second appearance based on the second user input, wherein said changing the first node icon to a second appearance includes displaying an image corresponding to the selected function.

45. (Currently Amended) The memory medium of claim [[43]] 44,

wherein said changing the first node icon to a second appearance comprises replacing the first node icon with a second node icon.

46. (Previously Presented) The memory medium of claim 43, wherein, prior to said associating the determined graphical program code with the node, the node does not have any associated graphical program code.

47. (Previously Presented) The memory medium of claim 43,

wherein, prior to said associating the determined graphical program code with the node, the node has associated default graphical program code in accordance with a default function for the node, and wherein the default graphical program code implements a first functionality; and

wherein said associating the determined graphical program code with the node comprises replacing the default graphical program code with the determined graphical program code.

48. (Previously Presented) The memory medium of claim 43,

wherein said receiving first user input comprises receiving the first user input to the node; and

wherein said receiving second user input comprises receiving the second user input to the node.

49. (Currently Amended) The memory medium of claim 43,

wherein said displaying the plurality of functions for the node in response to the first user input comprises[[;]] :

displaying a plurality of function classes for the node; and

in response to user input selecting a function class, displaying the plurality of functions, wherein the plurality of functions are in the selected function class.

50. (Currently Amended) The memory medium of claim 43,

wherein the node is a data acquisition (DAQ) node;

wherein the plurality of functions for the node comprise a plurality of DAQ functions;

wherein, prior to said associating, the DAQ node comprises one of:

- a generic read node;
- a generic write node;
- a generic channel creation node;
- a generic timing node; or
- a generic triggering node; and

wherein, after said associating, the DAQ node comprises one of:

- a specific read node in accordance with the selected function;
- a specific write node in accordance with the selected function;
- a specific channel creation node in accordance with the selected function;
- a specific timing node in accordance with the selected function; or
- a specific triggering node in accordance with the selected function.

51. (Cancelled)

52. (Currently Amended) A computer-implemented method for configuring a graphical program node, comprising:

- displaying a node in a graphical program;
- receiving first user input invoking display of a plurality of functions for the node;
- displaying the plurality of functions for the node in response to the first user input;
- receiving second user input selecting a function from the plurality of functions;

determining graphical program code based on the second user input, wherein the determined graphical program code is executable to provide functionality in accordance with the selected function;

associating the determined graphical program code with the node, wherein, when the node in the graphical program executes, the determined graphical program code executes to provide the functionality in accordance with the selected function;

wherein the node represents a subprogram, wherein the program instructions are further executable to perform:

receiving user input invoking expansion of the node; and

displaying the subprogram in response to said invoking.

53. (Currently Amended) A computer-accessible memory medium that stores program instructions executable by a processor to perform:

displaying a node in a graphical program;

receiving first user input invoking display of a plurality of functions for the node;

displaying the plurality of functions for the node in response to the first user input;

receiving second user input selecting a function from the plurality of functions;

determining a second node based on the selected function, wherein the second node comprises graphical program code executable to provide functionality in accordance with the selected function;

replacing the node in the graphical program with the second node, wherein, when the second node in the graphical program executes, the ~~determined~~ graphical program code of the second node executes to provide the functionality in accordance with the selected function;

wherein the node represents a subprogram, wherein the program instructions are further executable to perform:

receiving user input invoking expansion of the node; and

displaying the subprogram in response to said invoking.

54. (Previously Presented) The memory medium of claim 53, wherein the node comprises a first node icon, and wherein said displaying the node comprises displaying the first node icon, and wherein the second node comprises:

- the first node icon and the determined graphical program code; or
- a second node icon and the determined graphical program code.

55. (Previously Presented) The memory medium of claim 53, wherein the node and/or the second node is one or more of:

- polymorphic;
- function switchable; or
- function class switchable.

56. (Previously Presented) The memory medium of claim 53,

wherein the node is a data acquisition (DAQ) node;

wherein the DAQ node comprises one of:

- a generic read node;
- a generic write node;
- a generic channel creation node;
- a generic timing node; or
- a generic triggering node; and

wherein the second node comprises a corresponding one of:

- a specific read node in accordance with the selected function;
- a specific write node in accordance with the selected function;
- a specific channel creation node in accordance with the selected function;
- a specific timing node in accordance with the selected function; or
- a specific triggering node in accordance with the selected function.

57. (Previously Presented) The memory medium of claim 53, wherein the second node represents a subprogram, wherein the program instructions are further executable to perform:

- receiving user input invoking expansion of the second node; and

displaying the subprogram in response to said invoking.

58. (Currently Amended) A computer-implemented method for configuring a graphical program node, comprising:

displaying a node in a graphical program;
receiving first user input invoking display of a plurality of functions for the node;
displaying the plurality of functions for the node in response to the first user input;

receiving second user input selecting a function from the plurality of functions;
determining a second node based on the selected function, wherein the second node comprises graphical program code executable to provide functionality in accordance with the selected function;

replacing the node in the graphical program with the second node, wherein, when the second node in the graphical program executes, the determined graphical program code executes to provide the functionality in accordance with the selected function;

wherein the node represents a subprogram, wherein the program instructions are further executable to perform:

receiving user input invoking expansion of the node; and
displaying the subprogram in response to said invoking.

59. (Currently Amended) A computer-accessible memory medium that stores program instructions executable by a processor to perform:

displaying a node in a graphical program, wherein the node has a first node icon which is displayed in the graphical program, and wherein the first node icon has a first appearance;

receiving user input specifying wiring one or more inputs to the node, wherein the one or more inputs have respective one or more data types;

determining a function from a plurality of possible functions for the node based on the specified one or more inputs one or more data types;

determining graphical program code based on the determined function, wherein the determined graphical program code is executable to ~~provide functionality in accordance with~~ perform the determined function; and

associating the determined graphical program code with the node, wherein, when the node executes in the graphical program, the determined graphical program code is operable to execute to ~~provide the functionality in accordance with~~ perform the determined function.

60. (Previously Presented) The memory medium of claim 59, wherein the node has a first node icon which is displayed in the graphical program, and wherein the first node icon has a first appearance, wherein the program instructions are further executable to perform:

changing the first node icon to a second appearance based on the second user input, wherein said changing the first node icon to a second appearance includes displaying an image corresponding to the selected function.

61. (Previously Presented) The memory medium of claim 59,

wherein said changing the first node icon to a second appearance comprises replacing the first node icon with a second node icon.

62. (Previously Presented) The memory medium of claim 59, wherein, prior to said associating the determined graphical program code with the node, the node does not have any associated graphical program code.

63. (Previously Presented) The memory medium of claim 59,

wherein, prior to said associating the determined graphical program code with the node, the node has associated default graphical program code in accordance with a default function for the node, and wherein the default graphical program code implement a first functionality; and

wherein said associating the determined graphical program code with the node comprises replacing the default graphical program code with the determined graphical program code.

64. (Previously Presented) The memory medium of claim 59,

wherein the node is a data acquisition (DAQ) node;

wherein, prior to said associating, the DAQ node comprises one of:

a generic read node;

a generic write node;

a generic channel creation node;

a generic timing node; or

a generic triggering node; and

wherein, after said associating, the DAQ node comprises one of:

a specific read node in accordance with the selected function;

a specific write node in accordance with the selected function;

a specific channel creation node in accordance with the selected function;

a specific timing node in accordance with the selected function; or

a specific triggering node in accordance with the selected function.

65. (Previously Presented) The memory medium of claim 59, wherein the node represents a subprogram, wherein the program instructions are further executable to perform:

receiving user input invoking expansion of the node; and

displaying the subprogram in response to said invoking.

66. (Currently Amended) A computer-implemented method for configuring a graphical program node, comprising:

displaying a node in a graphical program, wherein the node has a first node icon which is displayed in the graphical program, and wherein the first node icon has a first appearance;

~~receiving user input specifying wiring one or more inputs to the node, wherein the one or more inputs have respective one or more data types;~~

determining a function from a plurality of possible functions for the node based on the ~~specified one or more inputs one or more data types~~;

determining graphical program code based on the determined function, wherein the determined graphical program code is executable to ~~provide functionality in accordance with perform~~ the determined function; and

associating the determined graphical program code with the node, wherein, when the node executes in the graphical program, the determined graphical program code is operable to execute to ~~provide the functionality in accordance with perform~~ the determined function.

67. (Currently Amended) A computer-accessible memory medium that stores program instructions executable by a processor to perform:

displaying a node in a graphical program, wherein the node has a first node icon which is displayed in the graphical program, and wherein the first node icon has a first appearance;

~~receiving user input specifying wiring one or more inputs to the node, wherein the one or more inputs have respective one or more data types;~~

determining a function from a plurality of possible functions for the node based on the ~~specified one or more inputs one or more data types~~;

determining a second node based on the ~~selected determined~~ function, wherein the second node comprises graphical program code executable to ~~provide functionality in accordance with the selected perform the determined~~ function; and

replacing the node in the graphical program with the second node, wherein, when the second node in the graphical program executes, the determined graphical program code executes to ~~provide functionality in accordance with the selected perform the determined~~ function.

68. (Currently Amended) A computer-implemented method for configuring a graphical program node, comprising:

displaying a node in a graphical program, wherein the node has a first node icon which is displayed in the graphical program, and wherein the first node icon has a first appearance;

~~receiving user input specifying wiring one or more inputs to the node, wherein the one or more inputs have respective one or more data types;~~

determining a function from a plurality of possible functions for the node based on the ~~specified one or more inputs one or more data types~~;

determining a second node based on the ~~selected determined~~ function, wherein the second node comprises graphical program code executable to ~~provide functionality in accordance with the selected perform the determined~~ function; and

replacing the node in the graphical program with the second node, wherein, when the second node in the graphical program executes, the determined graphical program code executes to ~~provide functionality in accordance with the selected perform the determined~~ function.